REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of May 12, 2010 is respectfully requested.

By this Amendment, claims 6-8 have been amended, and claim 9 has been cancelled. Thus, claims 6-8 are currently pending in the application. No new matter has been added by these amendments.

On pages 2-5 of the Office Action, the Examiner rejected claims 6-9 under 35 U.S.C. § 103(a) as being unpatentable over Shintani (JP 11-080952) in view of Sakemi et al. (US 6,245,394), Okuyama et al. (JP 2001-243886), Hidaka et al. (JP 10-106441) and Kim et al. For the reasons discussed below, it is respectfully submitted that the amended claims are clearly patentable over the prior art of record.

Amended independent claim 6 recites a method for manufacturing a plasma display panel (PDP) including a process for forming a metal oxide film onto a substrate of the PDP. The method of claim 6 includes introducing inert gas into a deposition room during deposition of the metal oxide film, and introducing oxygen into the deposition room during deposition of the metal oxide film. The method of claim 6 also includes introducing at least one gas selected from the group consisting of carbon monoxide and carbon dioxide into the deposition room during deposition of the metal oxide film, wherein the oxygen and the at least one gas are introduced into the deposition room in a predetermined amount.

The method of claim 6 also includes *controlling an amount of dangling bonds in the metal oxide film*, and equilibrating the amounts of the gasses introduced into the deposition room with an amount of gas exhausted from the deposition room by a vacuum exhausting system so as to maintain a degree of vacuum in the deposition room within a range of 1×10^{-1} Pa to 1×10^{-2} Pa, wherein the equilibrating of the amounts comprises adjusting an amount of the inert gas introduced into the deposition room.

Shintani discloses a vapor deposition method in which oxygen is introduced into the processing chamber. Further, Shintani discloses that an oxygen introduction amount and an exhaust speed of the processing chamber are controlled such that the partial pressure of the oxygen becomes equal to a set value. However, as noted by the Examiner on page 3 of the Office Action, Shintani does not disclose a deposition room having a degree of vacuum *within a*

range of 1×10^{-1} Pa to 1×10^{-2} Pa, and does not disclose *introducing inert gas into the deposition room* during deposition of the metal oxide film, as required by independent claim 6.

Further, Shintani also does not disclose *introducing at least one gas selected from the group consisting of carbon monoxide and carbon dioxide into the deposition room during deposition of the metal oxide film*, as required by independent claim 6. In addition, Shintani does not disclose a method which includes *controlling an amount of dangling bonds in the metal oxide film*, as required by independent claim 6.

In this regard, the Examiner cites Sakemi as disclosing a film growth method in which a degree of vacuum in the vacuum chamber is 10^{-4} Torr (1.3×10^{-2} Pa), which is within the range recited in claim 6. Further, the Examiner cites Okuyama as disclosing a method for manufacturing a plasma display panel in which a mixture of oxygen and an inert gas is introduced into a vacuum chamber. In addition, the Examiner cites Hidaka as disclosing introducing steam and oxygen into the chamber during deposition of an MgO film in order to enhance the crystal orientation of the film. The Examiner also cites Kim as disclosing that the secondary emission coefficient changes for an MgO film with exposure to water vapor or carbon dioxide.

Therefore, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to operate the process of Shintani under a degree of vacuum taught by Sakemi, and to incorporate the introduction of an inert gas as taught by Okuyama into the process of Shintani. In addition, the Examiner also indicates that it would have further been obvious to modify the process of Shintani to include the introduction of steam as taught by Hidaka in order to enhance the crystal orientation of the MgO film, and to use carbon dioxide as taught by Kim as an alternative to the water vapor of Hidaka so as to arrive at the invention of claim 6.

However, none of the Sakemi, Okuyama, Hidaka and Kim references discloses *controlling an amount of dangling bonds in the metal oxide film*, as required by independent claim 6.

In this regard, it is first noted that page 8 of the original specification of the present application discloses that the generation of dangling bonds in the MgO film causes the state of secondary electron emission to change, which affects the physical properties of the MgO film. Thus, page 8 of the original specification also indicates that by controlling the amount of

dangling bonds in the film (*i.e.*, by preventing changes to the state of secondary electron emission), the physical properties of the film can be stabilized.

With regard to the prior art, it is noted that the Sakemi, Okuyama, Hidaka and Kim references are completely silent as to the controlling of an amount of dangling bonds in the metal oxide film. Further, it is noted that Kim only discloses that the introduction of steam or carbon dioxide causes the secondary emission coefficient to decrease (*i.e.*, a change in the state of the secondary electron emission), but does not disclose or suggest controlling an amount of dangling bonds in the metal oxide film (*i.e.*, to prevent a change in the state of secondary electron emission).

Therefore, it is respectfully submitted that none of the Shintani, Sakemi, Okuyama, Hidaka and Kim references discloses or suggests, either alone or in combination, a method which includes controlling an amount of dangling bonds in the metal oxide film, as required by independent claim 6.

Further, it is also noted that none of the Shintani, Sakemi, Okuyama, Hidaka and Kim references discloses or suggests, either alone or in combination, equilibrating the amounts of the gasses introduced into the deposition room with an amount of gas exhausted from the deposition room by a vacuum exhausting system so as to maintain a degree of vacuum in the deposition room within a range of 1×10^{-1} Pa to 1×10^{-2} Pa, *wherein the equilibrating of the amounts comprises adjusting an amount of the inert gas introduced into the deposition room*, as required by independent claim 6.

Therefore, for the reasons presented above, it is believed apparent that the present invention as recited in independent claim 6 is not disclosed or suggested by the Shintani reference, the Sakemi reference, the Okuyama reference, the Hidaka reference and the Kim reference, taken either individually or in combination. Accordingly, a person having ordinary skill in the art would clearly not have modified the Shintani reference in view of the Sakemi reference, the Okuyama reference, the Hidaka reference and the Kim reference in such a manner as to result in or otherwise render obvious the present invention of independent claim 6.

Therefore, it is respectfully submitted that independent claim 6, as well as claims 7 and 8 which depend therefrom, are clearly allowable over the prior art of record.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice to that effect is

respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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